New possibilities for bioimaging from movies to molluscs

by Lindy Brophy

Fantasy and science fiction movies owe a lot to the software engineers behind the visual effects.

Derek Gerstmann, a new research fellow in both the Centre for Microscopy Characterisation and Analysis (CMCA) and the WA Supercomputer Program (WASP), is one of those engineers who have created tools that have enabled visual effects artists to generate the stunning visuals we remember in films such as Star Wars (below) and The Matrix.

The young visualisation expert says he has moved his research “from fiction to non-fiction!”

He took a drastic cut in salary to come from Apple in California to join UWA as a visualisation research fellow.

“My main reason for going back to academia was my desire to do research, and not be limited by the bounds of driving a commercial product, or being pushed to make the next financial market milestone,” Derek said.

“For me, being able to publish, share knowledge, and work with other scientists is a far more rewarding experience.”

Professor David Sampson, director of the CMCA, said Derek was funded under UWA’s Bioimaging Initiative, which co-ordinates and promotes activities across the University in bioimaging, bioengineering and related fields. It aims to increase the scale and impact of research at the interfaces of medicine, engineering and biology within the University and beyond.

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“Derek’s appointment is designed to marry WASP’s expertise in visualisation and handling large amounts of data with CMCA’s expertise in microscopy,” Professor Sampson said.

Apart from being interested in his father’s medical research, Derek has no medical background. His undergraduate degree from the University of Washington was in computing and software systems, and his Masters degree from Bournemouth University, UK, was in computer animation.

“In my last year as an undergrad at uni, I had an internship with Industrial Light and Magic, the visual effects company that George Lucas created for Star Wars. That position propelled my career onwards, enabling me to work at ESC during the Matrix films, and most recently at Weta Digital.

“At Weta I designed the architecture and software necessary to manage the millions of tasks which were scheduled on the thousands of computers (one of the world’s top 500 supercomputers), needed to create the elements for individual frames of film.”

“Elements of success on and off court

Chemistry, tennis and Nobel prizes make an unlikely combination, but it worked so well in the 1970s that the players decided to recreate the scenario this year.

The original picture (below) shows Andy Sierakowski, Director of UWA’s Office of Industry and Innovation, as a young postdoctoral fellow at Sussex University, victorious with his supervisor and tennis partner, Sir John Cornforth (standing), after playing a doubles match against their colleague Harry Kroto (whose partner took the photograph).

After completing his PhD in Chemistry at UWA in 1975, Dr Sierakowski joined Sir John’s lab in January 1976. It was just two months after Sir John had won the Nobel Prize for Chemistry, and during that year Sir John (an Australian who studied at the University of Sydney) was knighted and named Australian of the Year.

But all the accolades didn’t stop him from partnering his young colleague on the indoor university courts.

Dr Sierakowski says they played tennis every Monday evening and, on weekends, he partnered Professor Kroto in Sussex County tennis.

“Twenty years later, Harry also won a Nobel prize for Chemistry. I couldn’t have had more distinguished partners,” he said.

Earlier this year, after Dr Sierakowski spoke at a conference in Brighton, he visited Sir John (now aged 92) with Professor Kroto (who now divides his time between Florida State and Sussex universities) and they decided to recreate the photograph.

“This time we did it in the Cornforth’s lounge room. I think Sir John would be as likely to play a game of tennis now as I would be to win a Nobel Prize!” he said.

“The work I’m doing here at UWA is fascinating in a different way. I relish the opportunity to experience so many additional fields of knowledge,” he said.

Professor Sampson said Derek had already co-authored a conference paper on visualising muscle fibre damage in muscular dystrophy research with Blake Klyen, an engineering PhD student in the Optical + Biomedical Engineering Laboratory and Professor Miranda Grounds in Anatomy and Human Biology.

“And he sent Dr Jeremy Shaw from CMCA off to the world’s premier event in microscopy and microanalysis with a beautiful three-dimensional reconstruction of a mollusc that forms the basis of much of Jeremy and his collaborators’ work on biomineralisation,” he said.

Derek said the volume reconstruction of the mollusc was about a week’s work. “It wasn’t an easy data set to visualise. It required a fair amount of cleanup work in order to do a proper reconstruction while still maintaining the volume resolution.

“I try to get a good explanation from the biologists and geologists about how they got their data, and work with them to try to answer the questions they have, and to make sure that what I create is a true representation,” he said.

Derek is waiting for the completion of paperwork for his permanent residency before he starts work on his PhD with Research Associate Professor Paul Bourke from WASP.
The French-speaking world is learning about UWA – little by little.

Une Minute de UWA has been a regular segment on Rendez-Vous, a French language program every Tuesday evening on Radio Fremantle.

Sabine Kuuse, lecturer in European Languages and Studies, wanted her second-year French class to get out of the classroom and interact with the French community.

“But France is so far away. A radio station in Fremantle is much more practical!” she said.

Her students started listening to the program last year, reporting back to the class what they had heard and providing written feedback to the radio station’s website.

Rendez-Vous presenter Jacques Bernard said the feedback was thoughtful and well-received and the students’ interaction was stepped up in first semester this year, with a recorded segment about UWA.

“The students would listen to the program and present to the class, then each of them took a turn in preparing and recording a minute’s talk about anything to do with UWA,” Ms Kuuse said. “Their subjects ranged from the new course structure to netball, and included French books and films, students’ gap years and exchange programs.”

Une Minute de UWA was slotted in at 6.35pm, among French news, guests and information about cultural events in Australia. Despite Ms Kuuse’s concern about her students’ “strong Australian accents”, Mr Bernard said their presentations went very well.

“The students say they can understand Jacques when they listen to his program but they find it hard to understand his guests who all speak very quickly, as they would normally do,” Ms Kuuse said. “But I think this has been well worth it. Listening, reporting and presenting has helped them with their understanding and their use of colloquial expressions.”

Next year Ms Kuuse hopes to run the program again and may take the students into the radio station studio to speak on-air with Mr Bernard.

UWA has produced 85 Rhodes Scholars, more than most universities in the world, including Harvard and Stanford.

With this impressive record, the University is delighted to host a reception each year for the current Rhodes Scholar.

Guest of honour at last month’s party in the Vice-Chancellor’s residence was 2008 Rhodes Scholar John M’Cearna and, following the function’s tradition, he invited teachers and mentors who had helped him along the way.

John is pictured with (from left) friend and mentor Joseph Audino and UWA staff Professor John Dell, Dr Roberto Togneri and Professor Miranda Grounds, teachers who stood out from the rest for John, as he studied Engineering and Science.

The reception was hosted by the Vice-Chancellor, Professor Alan Robson, with special guest, the Governor and Chair of the Rhodes Selection Panel, Dr Ken Michael.

About 50 guests included Grant Donaldson, spokesperson for the Australian Rhodes Scholars’ Association (WA), the selection panel, UWA Deans and Executive and former Rhodes Scholars who live in WA.
There was an amusing and perhaps prophetic cartoon in *The West Australian* newspaper recently … a tow truck marked *Gorgon* was hauling Australia out of the economic mire, promising a bright future for all.

The cartoon summed up recent lessons learned in a fact-finding trip to the Pilbara by some of our Executive and other senior staff that our economic and social future is inextricably linked to the resources sector.

This was an experience that reminded us of the key role our University has played in the development of Western Australia since establishment in 1911. At that time, the founding Faculties of Agriculture, Geology and Engineering were seen as vital to the State’s future.

Over the past century, The University of Western Australia’s teaching and research have led to new and better ways to build the economic and social fabric of the State. This has been especially the case in relation to the minerals and energy sectors. By combining our University’s strengths across disciplines, our researchers are working to ensure that energy and mineral endeavours take into account the well-being of both industry and the community.

The University’s commitment is to build on almost 100 years of activity in support of the industries which continue to drive the Western Australian economy. This is reflected in the University’s Energy and Minerals Initiative which provides a gateway for engaging with research across the depth and breadth of resource-related issues.

This is particularly important since it is clear that the modern minerals industry is far more than the stereotypical view of a ‘dig it out, ship it off’ industry. The resources sector in WA comprises high-technology, knowledge-rich, complex, sophisticated industries – exactly why our University has such a key role.

The University’s Pilbara visit (facilitated by Chevron, Apache Energy, Rio Tinto, Woodside, BHP Billiton, the Pilbara Development Commission and the Fortescue Metals Group) included oil, gas and iron ore operations, as well as an opportunity to view the uniqueness of the Burrup Peninsula’s Indigenous rock art. Our Chancellor, Dr Michael Chaney, participated as a key speaker at a regional community function hosted by Rio Tinto.

The scale of the resources development in the Pilbara is hard to take in. The task ahead is to build value into existing partnerships – and develop new relationships – with industry, government and local communities as we continue to meet our overarching goal of achieving international excellence.

Serving the community remains the key plank of our University’s mission. This applies equally to those in the State’s regions as it does to our major cities.
Railway systems have lives of their own: a dynamic combination of government administration; train drivers, cleaners and guards; and passengers who represent the best and worst of society.

The social life of Perth’s railway system has been captured in a PhD thesis that explores the contrasting dynamics of 21st century society.

Dr Michaela Evans (pictured below) hopes that elements of her research will be useful for social policy makers: it is a study of public transport through the stories and experiences of all the people and systems involved, which contrasts rational order and play.

These opposing forces co-exist, against all odds, in the railway system: a metaphor for life.

“As an undergraduate in Anthropology, I learned how people live and work together and understand each other,” Dr Evans said.

“During my PhD research, I found that, in so many ways, we misunderstand each other and our lives are directed by serendipity, unexpected encounters and events. And this is all happening while our lives are ruled by timetables.”

Dr Evans doesn’t drive and uses public transport all over the world. “I really enjoyed and appreciated all of the different stories that I was told while travelling on Perth trains, from the hilarious to the outrageous and even the sad,” she said.

Through the government administration she had access to the people who design the system; plan the timetables; drive, clean and maintain the trains; run the stations; as well as transit guards and surveillance officers.

She also spent many hours on railway stations and in trains, observing behaviour and talking to passengers and even graffiti artists.

“I was surprised how open people were, both when they knew I was studying and when they thought I was just another passenger,” she said.

“As one of my participants said, you see the best and worst of people on trains. I saw beautiful interactions between strangers, helping each other and, dramatically opposed to that, some really horrible unprovoked violence.

“I’ve used these stories to provide a sense of how the city, with its violence and intimacy, its excitement and mundaneness, its strangeness and familiarity, its freedom and constraint, is handled and understood by its residents.”

Dr Evans said her work was an examination of the tensions between the two ideas (rational order and play).

“Within that, I looked at how people live within a bureaucratic system and the quality of urban social relations.”

Her stories sometimes read more like a film script than a thesis. While travelling with a driver, “he wonders aloud about the continual tension between the … order of the public railway timetable and the unpredictability of passengers. He muses about the degree of connection that he should establish with passengers” while waiting for two teenage boys running for the train.

“What’s the trouble driver?” asks the voice of a control operator, noticing the train has not left the station.


Readers meet the teenage graffiti artists openly admiring their friends’ and their own work along the line; the young woman having a sexually-explicit telephone conversation; mothers admonishing their children; and a woman who has lost her ticket and has to explain to the transit guards.

“I glance with despair at the slowly disappearing line intended to mark the border between my seat and this protruding stranger, and lament its passing under the man’s brown slacks” is an example of what Dr Evans labels ‘passengers as contaminants’.

“Watching people at train stations and on trains is like watching a film; one that you have seen before, but always distractedly with a sense that you will never see its finale and perhaps have missed the beginning,” she writes.

“The audio is inconsistent, sometimes the olfactory sense is unexpectedly engaged and, often with disconcerting consequences, the tactile sense is aroused.”

Dr Evans conducted her research, which earned her a PhD with Distinction, in the School of Social and Cultural Studies’ discipline of Anthropology and Sociology, supervised by the discipline chair, Professor Michael Pinches.
UWA’s new course structure – hailed as the biggest academic change in the hundred-year history of the University – will come into effect from 2012.

The implementation phase of the course restructure began after the decision of the Senate in December 2008 to approve the recommendations of the Review of Course Structures report: Education for Tomorrow’s World.

The decision to proceed with a 2012 start date was agreed last month by Executive after considering the full operational ramifications of the implementation.

The current course structure, which includes a myriad of course options with hundreds of different majors and compulsory core units, will be replaced with four three-year Bachelor degrees, and a four-year Bachelor of Philosophy (including Honours). This reduction of courses, coupled with simpler names, is aimed at reducing confusion over course requirements for staff and students.

Professional degrees, such as Medicine, Law and Architecture, will be studied at postgraduate level. The new course structures will not decrease the range of disciplines available for study, but they will run in a simpler way that will best serve students and the community into the future.

The four three-year undergraduate degrees will be Bachelor of Arts, Bachelor of Science, Bachelor of Design and Bachelor of Commerce. Each undergraduate degree will include breadth as well as depth, enabling students to sample a range of areas of study and keep their options open for future study and/or work.

Senior Deputy Vice-Chancellor Professor Bill Louden, who is leading the implementation, said the changes would bring the University into line with many of the top universities in the world.

Importantly, it would also provide much greater flexibility for students coming to UWA to reach their full potential.

“First degrees have become so restricted with compulsory units that a student headed towards being a medical practitioner would hardly be able to take a music unit. The new course structure will change this. We will require students to take some units from outside their main degree course,” Professor Louden said.

Undergraduate courses will have several other features. “Research will be embedded in the new curriculum. All students will take units in communication skills. We will increase the number of students who study abroad – and this will be made easier by more flexible degrees. And we will actively encourage students to take part in voluntary community service, providing the opportunities for them to do so,” Professor Louden said.

“We are undertaking this change carefully, over a fairly long time-frame. We want to allow time for high school students to understand the new structure and choose their final subjects accordingly.

“The current step for University staff is to think about what majors we want to offer. Some of the faculties are already well advanced with this.”
UWA’s geologists and engineers often advise exploration companies where to drill … but it’s not usually on campus.

Last month, a team of contractors drilled down 200 metres below the surface near James Oval, to reach into the subsurface strata below Crawley campus.

The heat within the subsurface could be transformed into energy to produce chilled water for air-conditioning on campus.

Tony Humphries, manager of building operations for Facilities Management, said the team took measurements as they drilled down, forming a temperature gradient, to work out the optimum depth for harnessing the geothermal energy. This is one of the tests the team is carrying out to better understand and estimate the temperature at depths of two to three kilometres.

A fortnight after the bore was put in place, the team used Walkaway Vertical Seismic Profiling (WVSP) to create shockwaves in the vicinity and at other nearby locations, along Thomas Street, at the edge of Kings Park.

“There is a microphone array in the bore and the exploration team was hoping to pick up vibrations from the shockwaves to work out the depths of the various strata they will need to drill through,” Tony said.

He said Facilities Management staff ensured the drilling and the WVSP did not affect the millions of dollars worth of sensitive equipment and delicate experiments in place on the campus.

If the project is successful, UWA campus could be the first of many buildings in Perth to take advantage of the free clean power available underground.

Students from all over the world converged on Albany last month to study water management in the Great Southern.

The 25 students, from Africa, Europe, South Asia, the USA and Australia, visited the UWA Centre of Excellence in Natural Resource Management (CENRM) in Albany, for a two week program as part of the International WaterCentre’s Master of Integrated Water Management program.

“UWA is a key partner of the International WaterCentre, a joint venture with The University of Queensland, and Monash and Griffith Universities,” said Professor Peter Davies, Director of CENRM in Albany.

“UWA staff in Albany are teaching a key part of this Master of Integrated Water Management. The students have morning lectures and afternoon field trips working with UWA staff and other local experts studying catchment and aquatic ecosystem health and water planning.”

Based in Brisbane, the International WaterCentre provides education and training, applied research and expert services focusing on cross-disciplinary understanding of better ways to manage water at catchment, stream and local scales. Formed by its partner universities in 2005, it has worked with students from all parts of the globe.

“The Great Southern is a special place,” said Dr Peter Oliver from the International WaterCentre. “It has significant water, stream and catchment management issues. When you combine these field-work opportunities with the ability to work with world-class staff from CENRM in Albany and other local experts, the hospitality of Albany and the Great Southern Development Commission and the beauty of the region, this has been both an enjoyable and very worthwhile educational experience.”
Law/Arts student Michael Sheldrick is committed to ending poverty ... and he is supported in his campaign by Bill Clinton and his foundation.

Michael, the driving force behind last month’s presentation at UWA of The Global Poverty Project’s 1.4 Billion Reasons, met the former President of the United States in Austin, Texas, in February, when he was one of 1,000 students from around the world who were selected to attend the Clinton Global Initiative (CGI).

It engages the next generation of leaders on university campuses to find solutions to urgent social and environmental concerns including achieving the Millennium Development Goals, the UN’s eight-point plan for halving the number of people living in extreme poverty by 2015.

“The global financial crisis has forced 100 million people back into poverty and many governments are failing to fulfil their obligations to the world’s poor, which means that we are nowhere near achieving this goal,” Michael said.

With the support of the Vice-Chancellor and the Guild, he co-ordinated the presentation of 1.4 Billion Reasons to about 200 UWA students last month, encouraging them to commit to taking action on the poverty issue.

“Bill Clinton said that we must all incorporate giving into our lives, whether it’s time or money,” Michael said. “He told us that when he was President he realised he couldn’t solve all the problems himself, that global problems needed the citizens of the world to do their bit too.”

Michael was helped to attend the CGI camp with funding from the Vice-Chancellor and the Faculty of Arts, Humanities and Social Sciences, where he is a tutor in Political Science and International Relations, while he completes his Law degree.

“Our generation is uniquely placed to campaign for an end to poverty. We are not just the leaders of tomorrow, we are already more powerful than any previous generation and technology can help us to create change now.

“By using YouTube, MySpace, FaceBook and Twitter, we can achieve widespread positive publicity that just isn’t possible with traditional media.”

Michael was launched into his advocacy role when he joined the
UWA’s Motorsport team has notched up another success.

It has claimed third position in the 2009 World Championship for Formula SAE (Society of Automotive Engineers) in Hockenheim, Germany, last month.

Sae World Championship is the world’s biggest engineering competition, formatted to allow students to design and compete on the international stage with a formula 1-style car built from scratch.

The challenge each year is to design, manufacture and race an open-wheel race car. The team is run and managed by students, with two academic supervisors, Associate Professor Lynn Kirkham and Dr Angus Tavner (This is A/Professor Kirkham’s final Motorsport challenge after being with the project since the beginning. He retires at the end of this year.)

Cars are built each year by a team of up to 60 students and UWA’s winning cars have always been yellow. This year the students raced in their eighth car and are now building the ninth.

The competition includes various examinations: dynamic (skidpan, acceleration, autocross, endurance, fuel economy) and static (cost, design and presentation). The rules change every year.

This year there were 78 entrants from around the world. The two teams that finished above the UWA team were the universities of Stuttgart and Hertfordshire.

“We had a very strong endurance event and with many other teams suffering failures, we were thrilled with the result we achieved, particularly having travelled so far to compete in a completely new competition with many new rules and different procedures,” said Michael Talikowski, UWA Motorsport Project Manager.

UWA Motorsport was established in 2001 and has a proud history, achieving local and international recognition in design. UWA Motorsport has won two Australasian titles and won the 2008 Formula SAE World Championships.

Professor David Smith, Dean of the Faculty of Engineering, Computing and Mathematics, said the UWA Motorsport team had achieved great results over the past four years.

“Students involved in the project should be very proud of themselves, as they have demonstrated exceptional skills in teamwork, management, leadership, health and safety, and marketing,” he said. “It is a great opportunity for them to prepare for future employment where they can apply those skills as engineers and managers.”

But he is also involved in supporting development projects. The students he recruited at O-Day this year have already raised more than $10,000 for Oaktree’s project in Timor Leste.

“For every 15,000 young people in Timor Leste, there are only 400 jobs. So we are working with Plan (a non-government organisation) to provide small business training, primarily in agriculture, for 200 young people over two years. We partner them with entrepreneurs in East Timor and help them to create work for themselves,” Michael said.

“It’s just a small project in the fight against poverty. Economists have estimated that it would cost $165 billion to achieve the Millennium Development Goals in our lifetime. This is achievable when you consider that developed countries have spent more than 8.5 trillion dollars in bailing out banks since the Global Financial Crisis hit.

“In order to achieve these goals, Australia promised to increase its overseas development assistance to 0.7 per cent of gross national income by 2015. John Howard committed 0.34 per cent and Kevin Rudd has said he would increase that to 0.5 per cent, but that hasn’t eventuated yet.”

But Michael is not keen on criticising or blaming governments.

“As I learnt from Bono at the 2006 Make Poverty History concert in Melbourne, governments need a mandate from the people to spend their money. Governments can only make a change if the community wants it.”

So he is working as hard as he can to make sure the community gets the message, is inspired to want the change, and communicates that to the Australian government.

He is leading Oaktree’s Stand Up For Change campaign later this year which will ask students to lobby their Members of Parliament, asking them to commit to 0.7% .

For more information on the campaign, go to www.theoaktree.org

Racing to the line for world third

Michael (right) and Hollywood actor Matthew McConaughey (Ghost of Girlfriends Past, Sahara, The Wedding Planner) took a break from painting a wall in a poor area, during the Clinton Global Initiative camp.
Successful psychology tool from PhD

A simple pen-and-paper screening instrument created by a UWA graduate enables health professionals to have a comprehensive psychological profile of their clients even before they walk in the door.

“The information the PsychProfiler provides is as much as you would get out of a two-hour clinical interview,” said Dr Shane Langsford (pictured right). “Yet the clients can complete the forms in their own time prior to their first appointment, which means they don’t have to pay for what would otherwise be quite an expensive exercise.”

Dr Langsford, Managing Director of Psychological and Educational Consultancy Services in Subiaco, started work on the screening tool (which can also be administered via a computer screen) when he was studying for his PhD in Educational Psychology at UWA in the late 1990s.

He has had an enthusiastic response from the industry. “Psychologists around the world are snapping it up, and it is gaining momentum within the medical arena in Australia, largely due to the Government’s recently introduced Better Access to Mental Health Care initiative,” he said.

“People can now claim Medicare rebates for health professionals, including psychologists, whose clients are referred by a GP or medical specialist,” Dr Langsford said.

“A psychological screening assessment as part of the referral from the medical practitioner is mandatory, so I’m hoping the PsychProfiler will eventually supersede the simplistic tools currently in use.

“It can be administered in the doctor’s waiting room and scored in just a few minutes, generating a comprehensive report that screens for more than 20 of the most prevalent psychological disorders.

“Gone are the days of a single diagnostic approach, and PsychProfiler can help the medical practitioner not only screen for a particular disorder, but also screen for common co-morbid disorders, and screen out disorders that often share similar symptoms.”

Dr Langsford has recently provided copies of the instrument he invented (with significant input from Winthrop Professor Stephen Houghton, Graduate School of Education, and Dr Graham Douglas) to UWA’s Schools of Psychology and Psychiatry and Clinical Neurosciences.

They have yet to put the PsychProfiler to use but Professor Sasha Janca (Psychiatry) and Professor Jan Fletcher (Psychology) have both said they were delighted to be given the instrument.

Staff in other universities around the world are providing very positive feedback: “…a very useful tool that can increase early sensitivity and overcome existing problems in screening for morbidity” (Professor Stuart McNaughton, University of Auckland);

“…will make a great addition to our test library” (Professor Michael E Lamb, Cambridge University); “What an invaluable contribution it is to the profession” (Dr Terry de Jong, University of Cape Town).

The PsychProfiler is published by ACER Press. A study by Dr Rassoul Sadeghi, a psychometrician at ACER, provides support for the measurement properties, internal consistency, reliability, and unidimensionality of the PsychProfiler as a general mental health index.

Dr Langsford said the PsychProfiler successfully addressed many of the shortcomings of existing instruments and led to an improvement in the accurate identification and treatment of disorders in children, adolescents and adults.

“It is based on recognised diagnostic criteria, incorporates multiple respondents and has been rigorously validated, thus reducing the subjectivity that often plagues other instruments,” he said.
Biological sciences and energy technologies are a dynamic 21st century mix ... just like the collaboration between UWA and the Chinese Academy of Sciences.

The University has recently signed Memoranda of Understanding with the Chinese Academy of Sciences (CAS) and its affiliated Graduate University, and formed the Australia-China Joint Centre for Biomass Utilisation Technology.

A large group of distinguished academics and executives from CAS visited UWA last month to sign the partnership agreements and inspect areas of the University with which they will be collaborating.

The research agreements are specifically between UWA and the Qingdao Institute of Bioenergy and Bioprocess and the Institute of Microbiology, both part of the Academy.

More links added to collaboration chain

Links have been forged with our academics: Professor Dongke Zhang, Director of UWA’s Centre for Petroleum, Fuels and Energy, who works with the CAS in areas of clean energy and sustainable development; Professor Peter Quinn, who is working with China on the Square Kilometre Array Science and Engineering Committee; and Professor Lister Staveley-Smith working with joint committees on tele-communications.

The Vice-Chancellor, Professor Alan Robson, said UWA was privileged to have developed a range of strong and productive partnerships with the CAS.

“Joint research activities are an essential component in our pursuit of global excellence,” he said.

“We take pride in a wide range of collaborative partnerships with China including several with the Province of Zhejiang, such as the UWA-Zhejiang University Laboratory of Functional Plant Genomics and Nutriomics, a joint laboratory of Biotherapeutics and Regenerative Medicine, and the Confucius Institute’s partnership with Zhejiang University and the Chinese Government.”

Professor Kadambot Siddique’s agriculture-based collaborations with Lanzhou University also broaden UWA’s links with China. They have resulted in 12 publications over the past three years.

Making the Asia connection

The latest agreements between China and UWA and, indeed, many of the relationships between UWA and China, are helped by Eva Chye, Principal Advisor on International Relations (North and Southeast Asia).

Ms Chye, who is fluent in Mandarin, and spent seven months at Zhejiang University on a Fay Gale Fellowship, has a mission to forge more academic relationships within the region. She also spent two months working at the WA Government Office in Kobe, to forge links with Japan.

“My role is to establish new strategic partnerships with high schools, universities, research institutes and government bodies,” she said. “I also manage long-term partnerships and work to increase the University’s profile and reputation.”

For any queries about collaborations in the region, such as links with the Graduate University of the Chinese Academy of Sciences or the National University of Singapore and research collaborations with Japan, contact Eva Chye on 6488 7588 or at eva.chye@uwa.edu.au
Try mediation for a happier result

UWA is one of the few – if not the only – workplaces in WA which can offer dispute resolution by mediation in-house.

David Rogers, the University’s senior employee relations officer, is keen to spread the word that we have a panel of trained mediators. Staff who are experiencing conflict in the workplace can feel confident of their help.

“We want to remove the stigma of reporting conflict,” Mr Rogers said. “Conflict situations can be so destructive and mediation is a positive way to handle it, not a negative way, like going through a formal dispute process.”

Employee Relations and Management Services (Human Resources) along with Jill Howieson at the Law School trained a dozen senior professional and academic staff in mediation techniques two years ago. Since then, they have mediated 12 staff conflicts.

“We’re interested in training more senior leadership staff in mediation and we have applied for the funding in the 2010 budget. It’s a great life skill as well as being applicable to many workplace situations,” he said.

Mr Rogers said alternative dispute resolution was a particular interest of his, after working with unions and in the industrial commission and seeing how well it worked.

“But mediations are not all successful,” he said. “We set out with the goal of reaching a wise agreement but we can’t guarantee we will get there.”

He said that people had often commented on the difficulty of starting a mediation but when it worked it could be transforming.

“We use a co-mediation model, using two mediators, to provide an opportunity to resolve a dispute in an environment of trust with your colleagues.

“The role of the mediator is not to take sides but to provide a neutral setting where power imbalances are recognised and named.

“Most commonly at UWA, disputes arise through behavioural issues (for example, a misunderstanding between a supervisor and an employee), or through contractual obligations or differences of opinion within, say, a research group.

“Many people see conflict as adversarial: If it can’t be fixed, they want to go straight to court. That’s a mindset we’re trying to change.”

Mr Rogers said that the Australian Attorney-General was looking at bringing in compulsory mediation in all areas of court processes, to keep disputes out of court.

“We’re keen for people to see how mediation can transform a dispute in a positive way and not be afraid of giving it a go.”

For more information on mediation at UWA, go to /www.hr.uwa.edu.au/hr/erm/mediation or contact David Rogers on 6488 3003.

Salary packaging a winner

More employees take advantage of salary packaging at UWA than at seven other Australian universities.

A benchmarking exercise conducted recently by Curtin University of Technology found that 2,144 staff at UWA use salary packaging, compared with 1,659 at Curtin, with similar numbers at three other universities and well under 1,000 at three more institutions. The other six universities were not identified in the study.

“We salary package more items for more staff at a more competitive rate,” said Rose Cunningham, salary packaging co-ordinator (Human Resources).

“More than 2,000 staff salary package a total of 4,724 items,” she said. “Some universities outsource their salary packaging so have no control over the fees charged. By doing it in-house, we can keep the fees down and we are continually checking on what’s available under Fringe Benefits Tax rules.

“We put effort into research and development of salary packaging because we are interested in recruiting and retaining staff. A lot of new staff say to me that they didn’t know anything about salary packaging until they came to UWA.

“The overseas staff are especially surprised and delighted,” she said.

The biggest single item packaged by UWA staff is superannuation, with 2,123 employees taking advantage of it. Parking is the next most popular benefit, with 1,421 people benefitting. University Club membership, novated car leases, Sport and Recreation Association membership, tickets for the Perth International Arts Festival, purchase of laptop computers and childcare are next on the list.

More than half the employees who use salary packaging take advantage of more than one item on the list of 22 available.

For more information on the benefits of salary packaging, call 6488 7186/3566.
UWA’s medical researchers have been given top billing by Australia’s biggest health research funding body.

The National Health and Medical Research Council (NHMRC) funds about 8,000 current projects and last month they named their Top Ten Projects 2009.

Two of the 10 projects are run by researchers at UWA: Professor Karin Eidne, from the WA Institute of Medical Research and Professor Peter Eastwood, from the School of Anatomy and Human Biology and the WA Sleep Disorders Research Institute (at QEII).

Professor Peter Eastwood is the chief investigator on a project on obstructive sleep apnoea and general anaesthesia, into which the NHMRC put $444,500 over five years.

He and his team have identified the nature of a long-suspected relationship between airway collapse during sleep and during anaesthesia.

A key discovery is that profound decreases in throat muscle activity occur when consciousness is lost during anaesthesia. This is similar to changes at the onset of sleep. Their work has demonstrated how small changes in head position can have a marked effect on upper airway stability.

Up to 24 per cent of Australian adults suffer from sleep apnoea (where people stop breathing). It is associated with increased risk of cardiovascular disease, diabetes and other conditions. So this research promises major gains in human wellbeing and reductions in health costs.

Professor Karin Eidne is a molecular and cell biologist who leads a project that is focused on G-protein coupled receptors (GPCR), biological sensors found on the surface of cells.

Nearly 50 per cent of pharmaceutical drugs are designed to target GPCRs so it is essential, for these medications, that the regulation of GPCR activity is understood.

New instruments, based on systems developed by her team, are being marketed world-wide.

Professor Eidne’s team has been working on GPCRs involved in appetite and energy regulation, blood circulation, metabolism and addiction, with NHMRC funding of $685,500 over five years.

“Our findings have increased our understanding of how these molecules interact with each other,” Professor Eidne said. “A decade ago, I could never have imagined that by pushing the limits of GPCR detection, so many new opportunities would become available.”

Diversity ideas?

UWA’s Diversity Initiatives Fund can help you to get an equity or diversity project up and running.

Applications for this year’s grants are now open. They are invited from individuals, groups, schools or faculties seeking funding to assist in the development of targeted diversity initiatives that will enhance equity for students and/or staff.

The purpose of the Fund is to provide financial assistance to new projects that aim to enhance educational and employment access, participation and outcomes for groups of students and staff identified as priority areas of focus:

- Women and men in non-traditional work or study areas
- Culturally and linguistically diverse staff and students
- People with a disability
- Indigenous staff and students
- Flexible work practices and life balance
- Sexual orientation and gender identity

Applications for funding close on Friday September 25.

An application form can be downloaded from the Equity and Diversity web site at www.equity.uwa.edu.au or by contacting Lesley Roberts on 6488 3873. Applications should be sent to Equity and Diversity, MBDP 350.
Please welcome the following new staff who joined the University during July and August 2009.

Dr Mohammed Aki Ayoub, Research Assistant Professor, UWA Centre for Medical Research
Pablo Barriga, Research Associate, Physics
Deborah Barton, Co-Ordinator, Library
Kate Beverley, Lecturer, Social and Cultural Studies
Florent Bonnard, Laboratory Assistant, Mechanical Engineering
Carlos Braun, Graduate Research Assistant, Biomedical, Biomolecular and Chemical Sciences
Dr Andrew Broertjes, Lecturer, Humanities
Dr Anne Burlinson, Senior Research Officer, Office of Development
Prof Sean Bydder, Professor, School of Surgery
Norma Cardy, Administrative Officer, Governance Services
Assistant Professor Raphael Chee, Assistant Professor, School of Surgery
Winyani Citra, Laboratory Assistant, Medicine and Pharmacology
Michael Davidson, Security Officer, Facilities Management, Security
Marisa De Pinho, Graduate Research Assistant, Dentistry
Matthew DeGois, IT Support Officer, Natural and Agricultural Sciences
Lydia Delriviere, Admin Assistant, International Centre
Leanne den Hartog, Research Officer, Social and Cultural Studies
Alan Duffy, Research Associate, Physics
Jean-Charles Dumas, Research Associate, Physics
Kylie Elston, Senior Web Content Editor, University Website Office
Dr Valerie Faulkner, Associate Professor, Graduate School of Education
Peta Gale, Administrative Assistant, UWA Extension
Manonita Ghosh, Lecturer, Population Health and Research Officer, School of Surgery
Mark Glossop, IT Projects Officer, Physics

Dr Julia Grassl, Research Associate, ARC Centre of Excellence for Plant Energy Biology
Leanne Hall, Administrative Officer, (Grants) Research Services
Ciar Hassett, Computer Support Officer, Library
Matthew Hodder, Research Assistant Professor, Offshore Foundation Systems
Gary Hollister, Administrative Officer, Physics
Prof Franklin Horowitz, Research Professor, School of Earth and Environment
Monja Jafari, Data Analyst/Programmer, Planning Services
Davina John, Administrative Officer, Sport Science, Exercise and Health
Margaret Jones, Associate Librarian, Library
Debra Kailis, Centre Manager, Student Services
Joanne Kemerer, Administrative Assistant, Arts, Humanities and Social Sciences
Donna Kirkham, Human Resources Consultant, Human Resources
Jack Kirkness, Technical Officer (Building) Facilities Management, Planning and Design
Dr Semyon Kobets, Assistant Professor, Music
John Koppen, Graduate Research Assistant, Pathology and Laboratory Medicine
Olivia Langensiepen, Web Co-ordinator, Research Services
Chun Pong Lee, Research Associate, ARC Centre of Excellence for Plant Energy Biology
Anne Liddle, Manager, Office of Development
Jane Loveday, Graduate Research Assistant, Population Health
Mitchell Low, Lecturer, Social and Cultural Studies
Basso Ludovico, Network and Communications Manager, Information Technology Services (ITS)
Helen Lund, Senior Research Officer, School of Surgery
Dr Susan Maushart, Research Associate Professor, Social and Cultural Studies
Joanne McEwan, Research Associate, Humanities
Kathryn McRae, Executive Assistant, Primary, Aboriginal and Rural Health Care

Donna Melville, Accounting Officer, (Banking Service) Financial Services
Dr Mary Murphy, Finance Officer, Anatomy and Human Biology
Tejas Murthy, Research Associate, Offshore Foundation Systems
Nivedan Nadaraj, Analyst/Programmer, Centre for Genetic Epidemiology and Biostatistics
Helen Nash, Administrative Officer, School of Earth and Environment
Bharli Nathoo, Database Assistant, Medicine and Pharmacology
Ainala Nayton, Technician (Animal House), Animal Care Services

Loren Osenbaugh, Administrative Officer, Research Services
Dean Pemberton, Graduate Research Assistant, Paediatrics and Child Health
Doreen Pensio, Admin Assistant, Human Resources
Andrew Purdie, Digital Copy Officer, UniPrint
Dr Gabriel Rivaland, Dentist, Oral Health Centre of WA
Nadine Romano, Systems Support Officer, Research Services
Christopher Rowles, Lecturer, Mechanical Engineering

NEW STAFF

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Dr Nita Sodhi, Lecturer, Population Health

Louise Stewart, Research Assistant Professor, Population Health

Andrew Sunderland, Research Associate, Physics

Clarissa Swell, Prospective Students Adviser, Student Services

Minh Tran, Research Associate, School of East and Environment

Dr Hang Thu Vu, Research Assistant Professor, Civil and Resource Engineering

Felicity Waddell, Graduate Research Assistant, Medicine and Pharmacology

Associate Professor Marshall Watson, Associate Professor, Primary, Aboriginal and Rural Health Care

Deirdre Webley, Assistant Central Timetabler, Venues Management

Pete Wheeler, Manager, Physics

Joe White, Administrative Assistant, Dentistry

Dr Sarath Wijeratne, Research Associate, School of Environmental Science and Engineering

Tess Williams, Research Development Officer, Research Services

Research Assistant Professor Deidra Young, Research Assistant Professor, Psychiatry and Clinical Neurosciences

NOTICES

CENTRE FOR INTEGRATED HUMAN STUDIES PUBLIC SEMINAR

Wednesday 23 September

Family – a dead concept?
With Dr Debra Judge, Dr Jo Goodie and family law practitioner Penny Kealey

5:30 – 7pm, Seminar Room 1.81, Anatomy and Human Biology

A GREEN ‘NEW DEAL’?

Confronting Climate Change, Peak Oil and the Financial Crisis

A one-day seminar hosted by the Institute of Advanced Studies, the Western Australian Policy Forum and the Institute for Progressive Policy

September 18, 8.30am – 5.30pm

Case Study Room, University Club

With a keynote public lecture on September 17 by Dr Andrew Glikson, Research School of Earth Science, School of Archaeology and Anthropology, ANU

For more details and to register, please visit http://www.ias.uwa.edu.au/conf/ greendeal

PROMOTION BRIEFS

Provided by Elizabeth Hutchison, Executive Officer, Academics

PROMOTION COMMITTEE, HUMAN RESOURCES

WINTHROP PROFESSOR

Professor Susan Broomhall (History, School of Humanities)

Professor Broomhall is recognised internationally as a prolific and influential feminist historian of early modern France. She has a strong reputation for her application of feminist analysis to historic innovations such as print culture, medical knowledge and practices, and religious transformations. Her recent and ongoing research moves beyond experiences in France to incorporate those of Switzerland, the Low Countries and Britain, and includes investigation of heritage, museum and tourism applications of feminist historical analysis.

Professor Broomhall has explored new methods of teaching and has been repeatedly nominated for teaching awards. She is dedicated to a culture of learning conducive to postgraduate research.

She has been Chair of both History and Medieval and Early Modern Studies Discipline Groups and Associate Dean (Research) in the Faculty of Arts, Humanities and Social Sciences, as well as a member of numerous University and national humanities committees.

PROFESSOR

Dr Antonio Buti (Law School)

Dr Buti's research has focused on the separation of indigenous children from their families. He has also studied and published on reparations for historical injustices, sports law, British child migration schemes, and the area of Trust Law. He was responsible for the WA Aboriginal Legal Service's submission to the inquiry that led to the Bringing them Home report. Dr Buti was awarded the Premier's Prize 2007 for his biography of Sir Ronald Wilson which highlighted both his contribution as an author and a member of the academic community.

Dr Buti believes that placing teaching within the context of real life situations enhances the intellectual understanding of law and allows students to appreciate the application of the law to the varied and often disparate life experiences of the people they will represent.

Dr Tim Sercombe (Materials Engineering, School of Mechanical Engineering)

Dr Sercombe's research covers sintering of metal powders and rapid manufacturing. His research expertise and publications are in the field of materials engineering, and have resulted in patented technology. He is internationally recognised in the areas of rapid manufacturing and powder metallurgy. He has led the development of materials engineering curricula to include current techniques and practices which anticipate the expectations of the engineering profession. He has been a pivotal player in the support of the modernisation of the School's materials laboratories.

ASSOCIATE PROFESSOR

Dr Silvana Gaudieri (School of Anatomy and Human Biology/ Centre for Forensic Science)

Dr Gaudieri's research centres on the genetics and biology of genes in the Major Histocompatibility Complex (MHC) that are directly involved in regulating host immune responses and how they drive viral evolution or immunity. The findings from this research have a high global significance relevant to vaccine design and other basic research into infectious pathogens such as HIV, Hepatitis C and B.

In addition to her research interest in immunogenetics, she has developed within the Centre for Forensic Science the DNA stream with a focus on education and teaching.

RESEARCH ASSOCIATE PROFESSOR

Dr Cheryl Johansen (Microbiology & Immunology, School of Biomedical, Biomolecular and Chemical Sciences)

Dr Johansen's area of research is in the cross-disciplinary areas of entomology and virology and she effectively manages both mosquito field and laboratory-based studies. She oversees all aspects of management of the mosquito-borne disease surveillance programme including: contractual negotiations with the WA Department of Health, budgeting and financial management, staff management, field work coordination, reporting to relevant stakeholders, and ethics approvals. Dr Johansen is recognised nationally for her expertise, knowledge and skills in this field and has been involved as one of the key scientists in reporting on the emergence of Japanese encephalitis virus in Australia. The spread of this virus in the Asia-Pacific region and into Australia presents potentially a major human health threat and supports the valuable contribution of her research to public health.

Dr Flavie Waters (School of Psychiatry and Clinical Neurosciences)

Dr Waters' research interests centre on the brain-behaviour relationship in psychotic symptoms of people with schizophrenia and dementia. She received a NHMRC Training Research Fellowship 2006 - 2009, an Early-Career Research Scholar Award from the Australasian Society of Psychiatric Research in 2007, and a Scientific Merit Award for her oral presentation at UWA in 2001. Dr Waters was also awarded a grant from the Department of Health in 2009 to develop a research program focusing on the mental health of older adults.

As the Early-Career Research representative for ASPR, she has taken an active role in supporting the professional development of early career researchers.

RESEARCH GRANTS AND CONTRACTS

BIG ISLAND RESEARCH PTY LTD

Dr Kathryn Morse, Dr Victoria Winton, Miss Anneliese Carson, Miss Vivienne Brown, Social and Cultural Studies: 'Archaeological Investigation Woodie Woodie East Pilbara Western Australia Njalman Section' – $20,975 (2009)

CHILD HEALTH RESEARCH FOUNDATION

Dr Sarra Jamieson, UWA Centre for Child Health Research: "The Genetics of Otitis Media in Western Australian Children" – (2009-11)

HEALTH DEPARTMENT OF WA ASSOCIATE Professor David Gilday, Computer Science and Software Engineering: 'eHealth Project' – $1,950,000 (2009-11)

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The librarians’ perspective: through new eyes

Jorja Cenin
UWA Librarian (Business and Humanities)

As a UWA musicology honours graduate it is wonderful to be back at UWA in my first professional position as a Librarian.

I am studying a Masters of Information Management, majoring in Library and Information Studies, which I will complete in November.

I have been passionate about music from a very young age. I learned to play the piano and clarinet, and participated in a wide variety of ensembles during my secondary and tertiary music studies.

But my interest in libraries was sparked after completing work experience in year 10, at the Mundaring Library, where I was subsequently employed as a shelver. I later took up a position as a casual library officer at both the Greenmount and Mundaring Libraries, which I continued throughout my tertiary studies.

I decided in year 12 to combine my interests in music and libraries by firstly pursuing an undergraduate degree in music, majoring in musicology, and then following it with postgraduate studies in librarianship. To date, my studies and career path have followed accordingly.

As a new librarian, it has not taken me long to settle in and become familiar with the requirements of my new job, thanks to all the staff being very welcoming, approachable, knowledgeable and patient with me. My role so far has been focused in three areas: assisting staff, students, and researchers find information; developing and reviewing web based help guides; and delivering training to students.

I have enjoyed my start at UWA and I’m endeavours to enhance and develop my skills and knowledge in pursuing my career as an academic librarian.

Samantha Judd
UWA Librarian (Medical and Dental)

Gone are the days of card catalogues, dusty volumes and total silence. In fact, libraries today are interactive, vibrant environments where silence isn’t always so golden. A visit to the ground floor of the new Science Library is proof of this. Students have embraced the ground floor as a space for interaction, collaboration and discussion.

Much of the change seen in libraries has been due to the technology revolution. Libraries have been forced to adapt or risk becoming obsolete in a Google world in which information is increasingly available online. Having earned a Bachelor of Science (Hons) from UWA and working as a Research Assistant for the past three years, and now in a new position as Librarian at the Medical and Dental Library, I have had the opportunity to look at library services from both the perspective of a researcher and now as a librarian.

With increasing access to journals and books online and email updates and alerts, many researchers and students now have no need to physically enter the library. Thus, while users are more connected, they are becoming increasingly elusive to the librarian. Librarians are challenged to deliver their services in a way that integrates with the daily life of the patron, while still remaining personally involved, relevant and visible to the user.

Katie Mills
UWA Librarian (Science)

In fact, academic libraries are embracing new technologies such as blogs, wikis and feeds to stay connected, and to help users to locate and disseminate relevant information from the huge expanse available. Librarians are encouraged to re-skill in areas such as e-learning and web-based technologies to deliver information and communicate effectively in today’s world. As an Arts (Communication Studies) graduate, I discovered many crossovers between my undergraduate study and my new career as a Librarian at the Science Library.

It’s apparent that practical communication skills are very relevant in the changing library setting. The emphasis seems to be on exploring and integrating emerging technologies and e-learning as new avenues of service delivery. I guess the challenge from the library’s point of view is to find new and effective ways of supporting teaching and learning across the University.